2SC5237

Silicon NPN Epitaxial

HITACHI

Application

High frequency amplifier

Features

- Excellent high frequency characteristics
  f_T = 400 MHz typ
- High voltage and low output capacitance
  V_{CEO} = 250 V, Cob = 3.5 pF typ
- Suitable for wide band video amplifier

Outline

TO-126FM

1. Emitter
2. Collector
3. Base

Hitachi semiconductor

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	250	V
Collector to emitter voltage	V_{CEO}	250	V
Emitter to base voltage	V_{EBO}	3	V
Collector current	I_C	150	mA
Collector peak current	$I_{C(peak)}$	300	mA
Collector power dissipation	P_C	1.4	W
		8*[1]	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

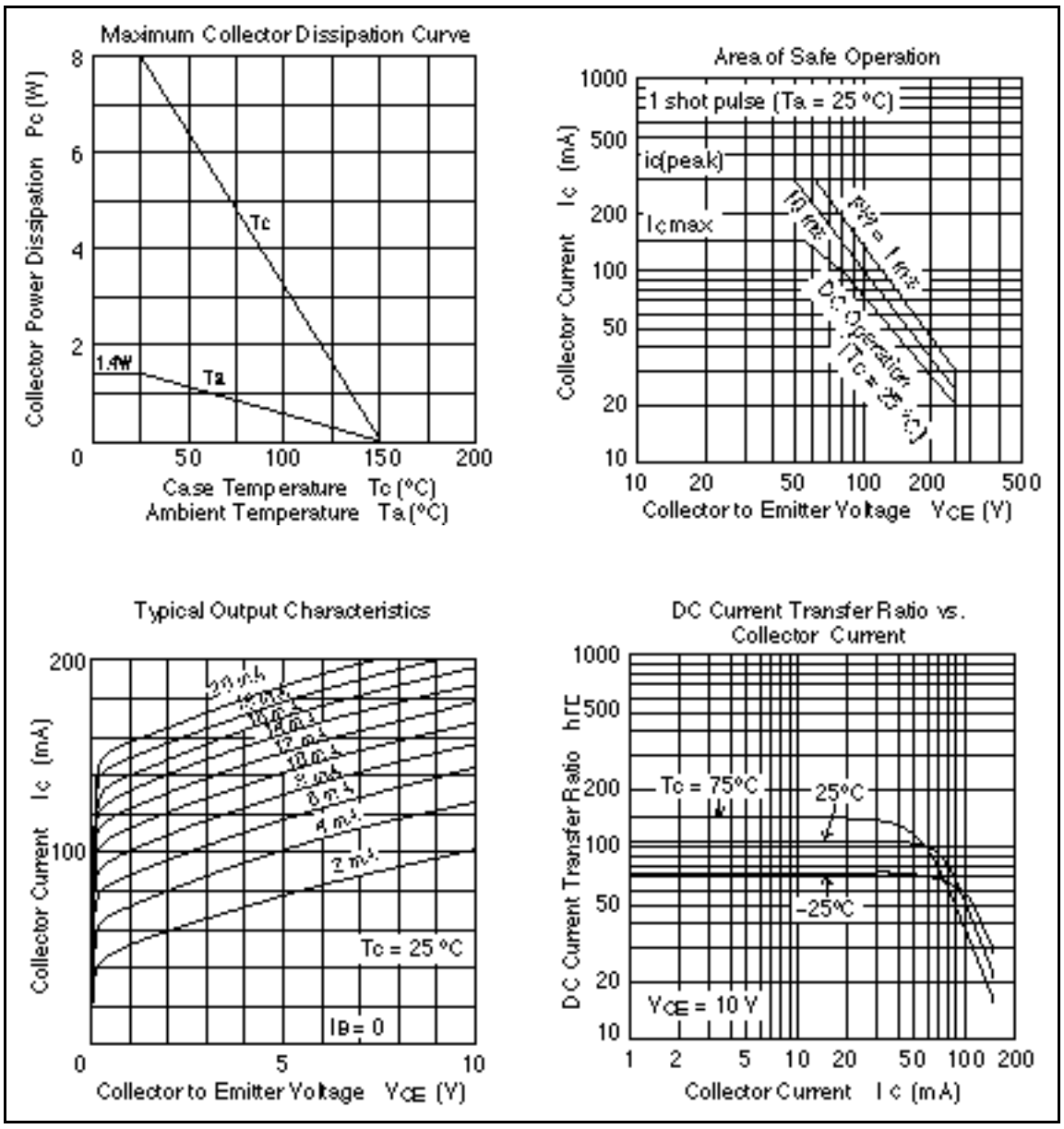
Note: 1. T_C = 25°C

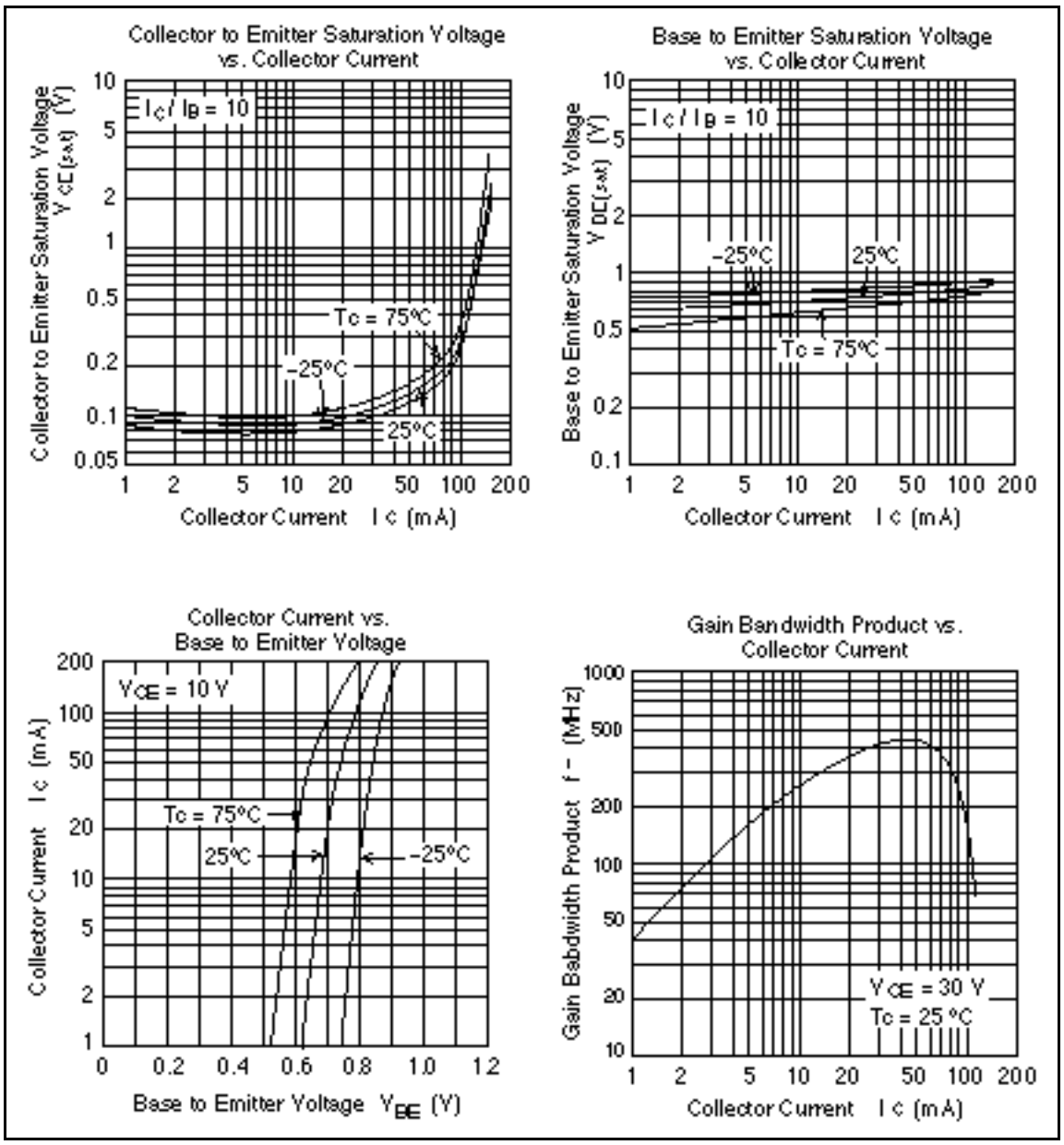
Electrical Characteristics (Ta = 25°C)

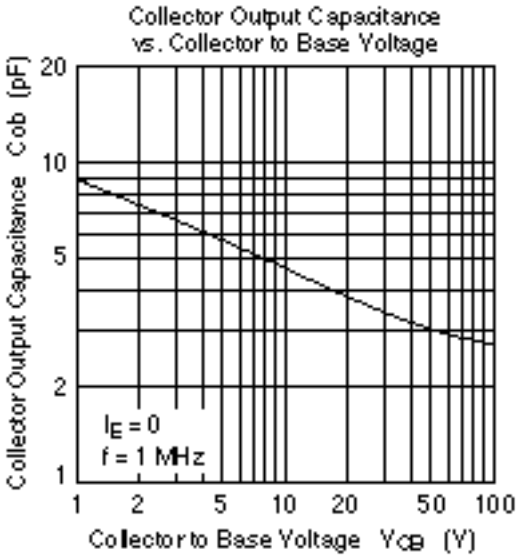
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	250	—	—	V	I_C = 10 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	250	—	—	V	I_C = 1 mA, R_{BE} = ∞
Collector cutoff current	I_{CBO}	—	—	1.0	µA	V_{CB} = 200 V, I_E = 0
Emitter cutoff current	I_{EBO}	—	—	10	µA	V_{EB} = 3 V, I_C = 0
DC current transfer ratio	h_{FE}*[1]	60	—	200	—	V_{CE} = 10 V, I_C = 10 mA
Base to emitter voltage	V_{BE}	—	—	1.0	V	V_{CE} = 10 V, I_C = 50 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	I_C = 50 mA, I_B = 5 mA
Gain bandwidth product	f_T	300	400	—	MHz	V_{CE} = 30 V, I_C = 50 mA
Collector output capacitance	Cob	—	3.5	5.0	pF	V_{CB} = 30 V, I_E = 0, f = 1 MHz

Note: 1. The 2SC5237 is grouped by h_{FE} and its specification is as follows.

B	C
60 to 120	100 to 200


Maximum Collector Dissipation Curve
Collector Power Dissipation Pc (W)
Tc
Ta
1.4W
Case Temperature Tc (°C)
Ambient Temperature Ta (°C)
Area of Safe Operation
1 shot pulse (Ta = 25 °C)
ic(peak)
Ic max
Collector Current Ic (mA)
Collector to Emitter Voltage VCE (V)
Typical Output Characteristics
Collector Current Ic (mA)
Tc = 25 °C
IB = 0
Collector to Emitter Voltage VCE (Y)
DC Current Transfer Ratio vs. Collector Current
DC Current Transfer Ratio hFE
Tc = 75°C
25°C
-25°C
VCE = 10 V
Collector Current Ic (mA)


Collector to Emitter Saturation Voltage vs. Collector Current
Collector to Emitter Saturation Voltage $V_{CE(sat)}$ (V)
$I_C / I_B = 10$
Tc = 75°C
-25°C
25°C
Collector Current I_C (mA)
Base to Emitter Saturation Voltage vs. Collector Current
Base to Emitter Saturation Voltage $V_{BE(sat)}$ (V)
$I_C / I_B = 10$
-25°C
25°C
Tc = 75°C
Collector Current I_C (mA)
Collector Current vs. Base to Emitter Voltage
Collector Current I_C (mA)
V_{CE} = 10 V
Tc = 75°C
25°C
-25°C
Base to Emitter Voltage V_{BE} (V)
Gain Bandwidth Product vs. Collector Current
Gain Babdwidth Product f – (MHz)
V_{CE} = 30 V
Tc = 25 °C
Collector Current I_C (mA)


Collector Output Capacitance
vs. Collector to Base Voltage
Collector Output Capacitance Cob (pF)
20
10
5
2
1
$I_E = 0$
f = 1 MHz
1
2
5
10
20
50
100
Collector to Base Voltage V_{CB} (V)

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